

HIDDEN PREVALENCE OF LOWER URINARY TRACT SYMPTOMS IN HEALTHY YOUNG WOMEN.

Hypothesis / aims of study

The aim of this study was to investigate the prevalence of lower urinary tract symptoms (LUTS) in young otherwise healthy females and to study the accompanying burden. Knowledge of the prevalence of LUTS in healthy young woman may be important to establish a baseline of what can be considered as 'normal' in the population, in particular this is the case in the context of therapeutic studies. Alternatively there may be a hidden health problem needing attention.

Study design, materials and methods

The study consisted of 159 young otherwise healthy female medical students aged 18 to 30 years. None of them had a history of urological disease, neurological disease, symptoms of urinary tract infection, pregnancy or parity. All subjects were asked to complete the International Consultation on Incontinence Modular Questionnaire for Female Lower Urinary Tract Symptoms (ICIQ-FLUTS) questionnaire. The questionnaire consisted of four questions on bladder filling, three questions on voiding, and five on incontinence. Each question concerning urinary symptoms allowed the patient to choose one out of five answers indicating increasing severity of the particular symptom: 'never', 'occasionally', 'sometimes', 'most of the time', and 'always'. A score of \geq sometimes was considered as positive for having the symptom. Every question on symptoms had a bother score assigned. A bother score \geq 3 (out of 10) was considered as significant bother. An extra question was added on the total number of urinary tract infections (UTI's) experienced during lifetime, classified according to frequency: 0, 1-5 times, 6-10, 11-15, or > 15 times.

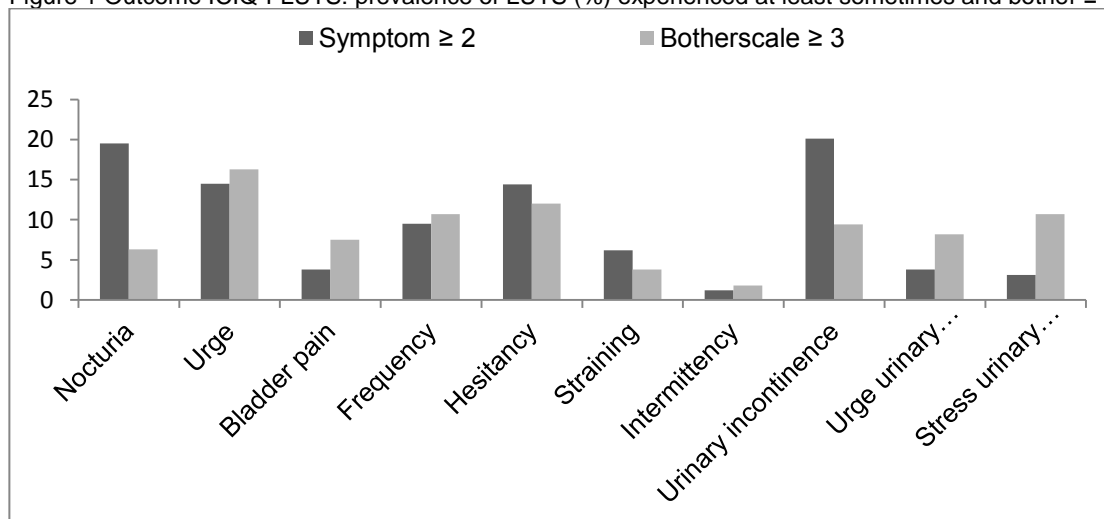
Statistical analysis was performed with Statistical Package for the Social Sciences (SPSS, version 20, Chigago, IL, USA). Mean values with standard deviation (SD) and median values with interquartile ranges (IQR) were calculated. Correlations were analyzed using Spearman's rho. A correlation $>$ 0.7 was considered a strong correlation. $P < 0.05$ was considered as significant.

Results

The median age of the participants was 22 years (IQR 20-24). A prevalence of LUTS in 94.3% of subjects was found. Only 5.7% of the subjects answered no/never to all the questions; 40.9% of the subjects had at least sometimes any symptoms. Urgency was experienced at least sometimes in 14.5% of the subjects and hesitancy in 14.5%. In 3.8% of subjects bladder pain was found; in 1.2% intermittency; and 6.2% of subjects had to strain to void. None of them had nocturnal enuresis. Nocturia once a night was present in 18.2% and twice a night in 1.3%; no one reported nocturia $>$ 2 times a night. Concerning micturition frequency, 71.1% voided between 1-6 times a day; 19.5% between 7-8 times a day; 8.2% between 9-10; 1.3% between 11-12 times a day. Involuntarily loss of urine was reported by 20.1%; 17.0% once a week or less and 3.1% twice a week. No subject had involuntary loss of urine more than twice a week. In this group, 3.8% experienced at least sometimes urge urinary incontinence, 3.1% stress urinary incontinence and 0% unexplained urinary incontinence. Subjects with involuntary loss of urine were divided into subgroups according to the type of urinary incontinence: 16/32(50%) had both stress- and urge urinary incontinence; 5/32(15.6%) had urge urinary incontinence only; 4/32(12.5%) had stress urinary incontinence only; 4/32(12.5%) had urge urinary incontinence and unexplained urinary incontinence. One out of 32(3.1%) had all three types of urinary incontinence, 2/32(6.2%) answered negative to all the three types off urinary incontinence.

For all bother scales the median value was 0. The highest bother score was given for urgency. A bother score of \geq 3 was seen in 16.3% of the subjects for urgency; in 6.3% for nocturia \geq 1; in 10.7% for frequency; in 7.5% for bladder pain; in 3.8% for straining to void; in 1.8% for intermittency; in 12.0% for hesitancy; in 9.4% for overall urinary incontinence; in 8.2% for urge urinary incontinence and in 10.7% for stress urinary incontinence.

Figure 1 Outcome ICIQ-FLUTS: prevalence of LUTS (%) experienced at least sometimes and bother \geq 3



In our study group, 54.1% ever experienced a UTI during life time; 45.9% 1-5 times; 6.3% between 6-10 times; 1.3% between 11-15 times, and one woman more than 15 times.

For all questions a positive correlation between symptoms and bother was found. A correlation > 0.7 was found for bladder pain, urge urinary incontinence, stress urinary incontinence and overall urinary incontinence.

Figure 2 Correlation symptoms and bother

	Nocturia ≥ 2	Pain	Urgency	Frequency ≥ 9	Hesitancy	Straining	Intermittency	Incontinence	Urge urinary incontinence	Stress urinary incontinence	Unexplained urinary incontinence	Nocturnal enuresis
ρ (rho)	0.678	0.934	0.633	0.402	0.405	0.614	0.608	0.849	0.906	0.876	0.662	-

(P<0.01)

Interpretation of results

In this group of young otherwise healthy females 94.3% experienced a form of LUTS, while only 5.7% did not experience any form off LUTS. The assigned bother was relatively low, but especially for bladder pain, urge urinary incontinence, stress urinary incontinence and overall urinary incontinence a strong positive correlation between symptoms and bother was found.

Of the participants, 54.1% had experienced at least one UTI and 8.2% of them had a UTI six times or more. These findings should be taken into account in therapeutic studies in a comparable age group. Furthermore, apparently the presence of LUTS or urinary incontinence in this population is no reason to seek medical advice.

Concluding message

In a presumed healthy population of young women, the prevalence of lower urinary tract symptoms, urinary incontinence and urinary tract infections is high, although with relatively low bother.

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Medical research ethics committee, UMC Utrecht **Helsinki:** Yes **Informed Consent:** Yes